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Longevity of American Presidents

When John F. Kennedy was sworn in as President of the United States on January 20 of this year, the American people had three former Chief Executives in their midst. It was the first time in three quarters of a century that so many ex-Presidents were alive at the time of an inauguration. As the table below shows, Dwight D. Eisenhower had reached the biblical three score and ten when he turned the reins of national government over to a man 27 years his junior. Harry S. Truman was then 76 years of age, and Herbert C. Hoover had already celebrated his 86th birthday.

Happily, both Mr. Hoover and Mr. Truman have already lived for a longer time since their inauguration than would have been expected on the basis of mortality conditions prevailing at the time they took office. Since the Civil War there have been only two other Presidents — Grover Cleveland and William H. Taft — who outlived their expectation of life at inauguration, as Table 2 on the next page shows.

The 15 deceased Presidents from Lincoln to Franklin D. Roosevelt lived a total of about 165 years after their inauguration; the combined expectation of life of these men on accession to the presidency was slightly over 290 years. These 15 men, in other words, lived about 8 years less, on the average, than expected. Three of these Presidents —Lincoln, Garfield, and McKinley —were assassinated while in office. But even if they are omitted from the record, the actual years lived by the deceased Presidents of the post-Civil War era still averaged 6.6 years less than expected at their inauguration.

The earlier Presidents had a much more favorable longevity

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TABLE 1—CURRENT AGE OF PRESIDENTS OF THE UNITED STATES

President	Age at Inauguration	Current Age*
Herbert C. Hoover	54	86
Harry S. Truman	60	76
Dwight D. Eisenhower	62	70
John F. Kennedy	43	43

*As of January 1961.

record. The 15 Presidents from Washington to Buchanan lived an average of 1⅓ years longer than their expectation of life at inauguration. Further analysis indicates that this reflects the longevity experience of the first 10 Presidents, who outlived their expectation of life at the time they took office by an average of about 4½ years. Of the first 10, only two—Washington and William H. Harrison—fell

TABLE 2—LONGEVITY OF DECEASED PRESIDENTS OF THE UNITED STATES

Expectation of Life at Time of Inauguration Compared with the Number of Years Actually Lived After Inauguration

President	Age at Inauguration	Expected Years of Life at Inauguration*	Years of Life Actually Lived After Inauguration
George Washington	57	15.3	10.6
John Adams	61	13.0	29.3
Thomas Jefferson	57	15.3	25.3
James Madison	57	15.3	27.3
James Monroe	58	14.7	14.3
John Quincy Adams	57	15.3	23.0
Andrew Jackson	61	13.0	16.3
Martin Van Buren	54	17.1	25.4
William H. Harrison†	68	9.4	0.1
John Tyler	51	18.9	21.2
James K. Polk	49	20.2	4.3
Zachary Taylor	64	11.3	1.4
Millard Fillmore	50	19.5	23.7
Franklin Pierce	48	20.8	16.6
James Buchanan	65	10.8	11.3
Abraham Lincoln‡	52	17.7	4.1
Andrew Johnson	56	15.4	10.3
Ulysses S. Grant	46	21.4	16.4
Rutherford B. Hayes	54	16.5	15.9
James A. Garfield‡	49	19.5	0.6
Chester A. Arthur	50	18.8	5.4
Grover Cleveland	47	22.7	23.3
Benjamin Harrison	55	17.6	12.0
William McKinley‡	54	18.1	4.5
Theodore Roosevelt	42	26.3	17.3
William H. Taft	51	19.7	21.0
Woodrow Wilson	56	16.4	10.9
Warren G. Harding†	55	18.4	2.4
Calvin Coolidge	51	21.3	9.4
Franklin D. Roosevelt†	51	20.8	12.1

*According to mortality conditions prevailing about the time of inauguration.
†Died during tenure.
‡Assassinated.

appreciably short of their expectation of life. The expected age at death for the Presidents from Washington to Tyler averaged 72.8 years, whereas their actual age at death averaged 77.4 years.

John Adams was the longest-lived of our Presidents, living to age 90, or 16 years in excess of his expectation of life at inauguration. In a historical coincidence, Jefferson died on the same day as John Adams—July 4, 1826—at the age of 83, or 11 years later than might have been expected on the basis of the mortality prevailing at the time. Madison, like Jefferson, was 57 years of age when he took the oath of office, and lived to age 85. At the other extreme, Garfield was the shortest-lived, dying from an assassin's bullet at the age of 49; this was 19 years short of his expectation of life at inauguration. Polk and Harding died at 53 and 57, respectively, 16 years before their time. Franklin D. Roosevelt was 63 years of age when he died, 8 years short of his expectation of life at the time he took office.

Considering that there have been only 34 Presidents of the United States and that their longevity record has varied from one historic period to another, it is not possible to say whether or not the presidency shortens life.

The Constitution of the United States specifies that a person to be eligible for the presidency must have reached his 35th birthday. Actually, the youngest—Theodore Roosevelt—was 42 years old when he took office; Kennedy was 43 years of age. There were only five other Presidents in our history who were under age 50 when sworn into office: Polk, Pierce, Grant, Garfield, and Cleveland. Of the seven Presidents who had passed their 60th birthday at inauguration, five preceded Lincoln; the other two were Truman, who was 60 when he took the oath of office, and Eisenhower, who was 62. The oldest men to become President were William H. Harrison and Buchanan, who were 68 and 65 years, respectively, at their inauguration.

Morbidity and Mortality from Heart Disease*

HEART disease is a major cause of illness and disability and by far the leading cause of death in both the United States and Canada.

Recent information on morbidity from heart disease in the United States is available from the current National Health Survey. Data collected from household interviews in the period July 1957-June 1958 indicated that there were about 4,850,000 persons in the United States with a known heart condition in the survey year; this

*This is the first of two articles on current morbidity and mortality from heart disease. The second article will deal with the etiological types of the disease.

was equivalent to a rate of 29 per 1,000, or practically 3 percent of the population. This estimate is an understatement of the actual prevalence of the disease. In the first place, the Survey related only to persons who were aware of their condition and who regarded it of sufficient significance to report to the interviewer. Furthermore, the Survey was limited to the civilian non-institutional population, and therefore excluded those with a heart condition who were in institutions; this latter group, inasmuch as it includes a high proportion of older people, has a higher than average frequency of heart disease. Allowing for the groups omitted from the Survey and for the increase in population since the data were collected, it is estimated that there are currently at least 5¼ million people in the United States who have a known heart condition.

There are, in addition, a substantial number of people with undetected heart disease—an inference justified by the results of surveys which include medical examinations. The information collected in the interviews also indicated that there were at that time about 5¼ million people in the United States who had high blood pressure without a known heart condition.

The relative frequency of heart conditions increases rapidly with advance in age; Table 1 shows the details for all reported cases and separately for those who received

TABLE 1—FREQUENCY OF HEART CONDITIONS

By Sex and Age, Estimated on Basis of U.S. National Health Survey, July 1957—June 1958

Age Period (Years)	All Cases				Medically Attended in Year Preceding Interview			
	Male		Female		Male		Female	
	Number of Persons (000s)	Rate per 1,000 Population	Number of Persons (000s)	Rate per 1,000 Population	Number of Persons (000s)	Rate per 1,000 Population	Number of Persons (000s)	Rate per 1,000 Population
All Ages	2,403	29.3	2,446	28.3	1,713	20.9	1,885	21.8
Under 25	174	4.7	179	4.8	117	3.2	130	3.5
25-44	276	12.6	277	11.7	167	7.6	166	7.0
45-54	374	39.0	300	29.9	265	27.6	220	21.9
55-64	607	84.9	504	65.6	445	62.3	411	53.5
65-74	631	139.9	619	121.0	466	103.3	495	96.8
75 and over	342	160.5	566	205.4	254	119.2	462	167.7

Note: Data are based on household interviews and refer to civilian noninstitutional population.
Source: U.S. National Health Survey, Series B-No. 13, 1960, pp. 13 and 17.

TABLE 2—MORTALITY FROM HEART DISEASE (ALL FORMS)*

By Color, Sex, and Age. United States, 1958

Age Period (Years)	Death Rate per 100,000			
	White		Nonwhite	
	Males	Females	Males	Females
All Ages†	387.6	211.8	412.2	321.7
Under 1	229.8	186.8	212.3	193.8
1– 4	7.9	8.2	11.1	10.9
5–14	3.4	3.1	4.0	4.6
15–24	6.3	4.6	9.9	11.5
25–34	20.1	9.9	45.3	40.5
35–44	110.3	29.5	171.8	128.3
45–54	405.9	109.5	526.1	400.1
55–64	1,063.4	392.2	1,266.6	996.0
65–74	2,417.5	1,335.3	2,803.8	2,133.9
75 and over	5,697.5	4,750.1	3,814.2	3,150.0

*Includes congenital malformations of the circulatory system and cardiovascular syphilis.
†Adjusted on basis of total population, United States, 1940.
Source of basic data: National Office of Vital Statistics, *Vital Statistics of the United States, 1958.*

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medical attention for the condition in the year immediately preceding the interview. Of the total number of cases reported, about four fifths were at ages 45 and over, and more than two fifths at ages 65 and over. Males have a higher prevalence rate than females in each of the adult age groups except at ages 75 and over, where the rate for females is the greater by nearly 30 percent. About 70 percent of the males and a somewhat higher proportion of the females reporting a heart condition stated that they had received medical attention for the condition in the 12 months prior to the interview.

A large majority of the people with a heart condition reported some restriction in activity because of the disorder. Activity was restricted an average of 49 days a year per person with a heart condition. However, in little more than one fourth of the cases of restricted activity was the disability serious enough to cause confinement to bed for a day or more. Bed disability averaged 18 days a year per person with a heart condition.

On the basis of the Canadian Sickness Survey of 1950-51, it is estimated that there are at present in Canada about 650,000 persons with heart disease or high blood pressure. About 70 percent of them are concentrated at ages 45 and over.

The pattern of mortality from heart disease in the United States is similar to that for morbidity. As Table 2 shows, the age-adjusted death rate from the disease among white males is nearly twice the rate among white females at all ages combined. The sex difference in mortality is greatest in the age range 35-54 years, where the death rate for males is nearly 4 times that for females. In each sex, the death rate from heart disease is lowest at ages 5-14 and rises very rapidly thereafter with advance in age.

Nonwhite persons experience substantially higher death rates from heart disease than white persons at every period of life except 75 years and over. The differences are relatively greater for females than for males. The sex differences in the mortality from the disease are less for nonwhites than for white persons.

The outlook is that heart disease will continue to be a major medical and public health problem. The main tasks, therefore, are to prevent premature illness and death from the disease, to improve the care and management of cardiac patients, and to rehabilitate them to their greatest potential. Life insurance mortality investigations, including the Build and Blood Pressure Study, 1959, have consistently shown that overweight and elevated blood pressure are associated with excessive mortality from heart disease in middle and later life. These findings underscore the importance of weight control in both the prevention and management of heart disease. It is expected that research on various phases of heart disease, including the investigations supported by the Life Insurance Medical Research Fund, will provide new measures for reducing the toll from the disease.

Accidents: A Major Killer

SOME gains have been made in recent years toward reducing the death rate from accidents in the United States. The rate fell quite steadily from 60 per 100,000 population in 1950 to 52 in 1960. Nevertheless, accidents last year, outranked only by the cardiovascular diseases and cancer, took a toll of about 93,000 lives.

It is apparent from the table on page 7 that accidents are a dominant item in the total mortality of children and young adults. Among white males, accidental injuries in 1957-58 accounted for somewhat over one fourth of all the deaths at ages 1-4 years, the proportion increasing to nearly one half at ages 5-14, and to about two thirds in the age range 15-24 years. Even at ages 25-44 accidents are responsible for at least one fourth of the total mortality. They rank first as a cause of death among white males in the age range 1-34 years

and are outnumbered only by heart disease at ages 35-44.

Accidents are not as great a menace to the lives of girls and young women. Yet, such injuries account for one fourth of the total mortality among white females at ages 1-4, for nearly one third at ages 5-14, and for two fifths of the total at 15-19 years.

A somewhat different picture of the accident problem appears when attention is focused on the actual death rates. Among white

MORTALITY FROM SELECTED TYPES OF ACCIDENTS

White Persons by Sex and Age. United States, 1957-58

Type of Accident	All Ages	1-4	5-14	15-19	20-24	25-44	45-64	65 and Over
	White Males							
Accidents—Total, Percent of All Causes of Death	7	29	47	65	64	27	5	3
Average Death Rate per 100,000 Population								
Accidents—total	73.1	31.2	25.3	84.3	110.7	67.6	78.5	193.3
Motor vehicle	32.9	10.5	10.4	54.2	76.3	35.6	33.1	58.4
Pedestrian*	5.8	4.7	4.6	2.5	2.5	2.4	6.8	25.1
Falls	11.5	1.7	0.9	1.8	2.6	3.7	11.9	87.1
Drowning†	4.5	6.2	5.1	9.9	5.6	3.1	3.4	3.9
Fires and burns by other means	3.9	4.6	1.5	1.0	1.8	2.9	5.0	13.2
Firearm	2.3	0.5	2.2	5.8	3.4	2.0	2.5	1.8
All other	18.0	7.7	5.2	11.6	21.0	20.3	22.6	28.9
	White Females							
Accidents—Total, Percent of All Causes of Death	4	25	31	40	28	10	3	3
Average Death Rate per 100,000 Population								
Accidents—total	32.3	22.5	10.9	20.9	16.8	14.5	24.8	157.3
Falls	12.3	1.0	0.3	0.3	0.2	0.8	4.3	112.2
Motor vehicle	11.1	8.0	5.4	16.4	12.7	9.1	12.9	22.5
Pedestrian*	2.1	2.8	2.1	0.9	0.4	0.6	2.2	7.7
Fires and burns by other means	2.8	4.6	1.8	0.7	1.0	1.4	2.5	10.0
Drowning†	0.9	2.9	1.3	1.0	0.5	0.4	0.6	0.6
Poisoning by solids and liquids	0.6	1.7	‡	0.1	0.2	0.6	0.8	0.6
All other	4.6	4.3	2.1	2.4	2.2	2.2	3.7	11.4

*Traffic accidents.
†Excludes water transportation.
‡Less than 0.05.
Source of basic data: Various reports of the National Office of Vital Statistics.

males, the accident death rate in 1957-58 increased sharply from a minimum of 25.3 per 100,000 at ages 5-14 to 110.7 at ages 20-24. In the next 20 years of life the rate was 67.6 per 100,000, but then rose once again, reaching a peak of 193.3 at ages 65 and over. The accident mortality among females was below that for males at each period of life. At ages 15-19 the death rate for the females was about one fourth that for the males and at 20-24 years it was less than one sixth the male rate.

Among both males and females, motor vehicle accidents constitute the largest single cause of fatal injuries at every age period under 65 years. The peak motor vehicle accident death rate among white males—76.3 per 100,000—occurred at ages 20-24, where it accounted for about 70 percent of the total accident mortality. At no age group among the males did the deaths sustained in motor vehicle accidents comprise less than 30 percent of the total. Females record a lower motor vehicle accident death rate than males throughout life, their rate being only about one third that among males for all ages combined. Occupants of motor vehicles—drivers and passengers—constitute the majority of victims in each sex. Fatal injuries among pedestrians are prominent only among children and the elderly.

Fatal falls are largely concentrated at the older ages, but so heavy is their toll in late life that they rank second to motor vehicles as a cause of accidental death among white males at all ages combined, and are the leading cause of accidental death among white females. Accidental falls are relatively more frequent among males than among females at all except the advanced ages. The rise in the death rate with age among white females is exceedingly rapid; in 1957-58 it rose from 31.4 per 100,000 at ages 65-74 to nearly 4 times that figure at ages 75-84, and to 732.2 per 100,000 at ages 85 and over.

The large majority of drownings occur among males, and are most frequent among children and young adults. Among white males, nearly three fifths of the drowning victims (excluding those associated with small boat accidents) are under 25 years of age. Fatal firearm accidents, like drownings, are at a peak among boys at ages 15-19. On the other hand, fires and burns by other means, which take an appreciable toll in both sexes, record their highest death rates among the very young and the very old.

Accidents are not only a major killer but also a leading cause of illness and disability. Data derived from the U. S. National Health Survey show that in the year ended June 1958 approximately 47 million persons sustained injuries involving one or more days of restricted activity or medical

attendance. About one third of the males and nearly one fourth of the females in the United States suffered such injury during that year.

Aspects of the Homicide Problem

RECENT years have witnessed a halt in the downward trend of the homicide rate in the United States. The rate fell from 6.4 per 100,000 in 1946, the first full year after World War II, to 4.5 in 1955, remained at about that level for the next three years, then rose to 4.7 per 100,000 in 1959. In the latter year, somewhat over 8,000 homicides occurred in the United States.

The homicide rate among nonwhite males is more than 10 times that among white males; the figures were 34.7 and 3.4 per 100,000, respectively, in 1958, the latest year for which complete data are available. Nonwhite males account for about 40 percent of all homicide victims in the United States, although they comprise little more than 5 percent of the country's population. Among females, as well, the relative frequency of homicide is much greater among nonwhites than among whites, the rates being 9.3 and 1.4 per 100,000, respectively.

In each color-sex group the homicide rate is at a peak in early and middle adult life, as Table 1 shows. The profile of the age curve differs somewhat for the two races. Among white males, for example, the rate in 1958 rose moderately from 2.8 per 100,000 at ages 15-19 to 5.5 at ages 25-34, then tended downward with advance in age. Among nonwhite males, the homicide rate increased sharply from 25.3 per 100,000 at ages 15-19 to a maximum of 82.8 at 25-34 years, then fell quite rapidly with age.

Somewhat over half of all the homicide victims are slain by means of firearms. In approximately 1 out of every 4 slayings, cutting and piercing instruments are used, while the remaining victims are killed by other means. The

TABLE 1
HOMICIDE RATES PER 100,000
by Color, Sex, and Age
United States, 1958

Age (Years)	White		Nonwhite	
	Male	Female	Male	Female
All Ages	3.4	1.4	34.7	9.3
Under 15	0.7	0.6	1.6	1.3
15-19	2.8	1.3	25.3	7.8
20-24	5.4	1.9	61.5	17.4
25-34	5.5	1.7	82.8	20.6
35-44	4.8	2.2	72.9	18.1
45-54	5.1	1.9	53.8	11.9
55-64	4.1	1.2	32.7	5.4
65 and over	3.5	1.6	18.3	3.9

Source of basic data: National Office of Vital Statistics.

proportion of those slain by firearms is slightly lower among nonwhite than among white persons, but the relative use of cutting and piercing instruments is nearly 3 times as great among the nonwhite as among the white.

The homicide rate varies considerably from one area of the country to another, as Table 2 shows. In general, the North has the lowest rates, the West is in an intermediate position, while the South has the highest rates. In 1958, the rate ranged from 1.1 per 100,000 population in New England to 8.8 in the East South Central area. The records for individual States show even greater geographic differences. Five States—New Hampshire, Rhode Island, Massachusetts, North Dakota, and South Dakota—had homicide rates of less than 1.0 per 100,000, New Hampshire having the minimum rate of 0.3. On the other hand, three States recorded rates exceeding 10.0 per 100,000: Alabama (11.4), Florida (10.7), and Georgia (10.4), as did the District of Columbia (10.4). The relatively unfavorable record for the South reflects both the area's high proportion of nonwhites and an above-average frequency of homicide among its white persons.

TABLE 2
HOMICIDE RATE BY GEOGRAPHIC AREA

Total Persons, All Ages
United States, 1958

Division	Rate per 100,000
United States	4.5
New England	1.1
Middle Atlantic	2.7
East North Central	3.2
West North Central	2.6
South Atlantic	8.3
East South Central	8.8
West South Central	7.4
Mountain	4.1
Pacific	3.6

Source: National Office of Vital Statistics.

AVAILABLE FOR DISTRIBUTION

The following have been published recently, and reprints will be sent upon request.

1. "Overweight: Its Significance and Prevention," *Modern Medicine*, December 1, 1960. (Charts presented in the Scientific Exhibit of the Annual Meeting of the American Medical Association, June 1960.)

2. "Current Concepts in Diabetes Mellitus: Vital Statistics," *New York State Journal of Medicine*, February 15, 1961.

MORTALITY FROM SELECTED CAUSES

Industrial Policyholders, Metropolitan Life Insurance Company
January, 1961

Cause of Death	Annual Rate per 100,000 Policyholders*				
	January		Year		
	1961†	1960†	1960†	1959†	1958
All Causes	728.1	723.9	671.2	665.3	662.4
Tuberculosis (all forms)	7.2	4.2	5.4	5.7	6.7
Communicable diseases of childhood	0.1	0.2	0.1	0.1	0.2
Acute poliomyelitis	—	0.2	0.1	0.2	0.1
Malignant neoplasms	144.0	144.6	142.4	141.9	139.8
Digestive system	45.4	48.1	47.6	48.1	46.8
Respiratory system	23.9	20.8	21.5	21.2	19.9
Diabetes mellitus	17.3	16.0	15.2	14.7	15.2
Diseases of the cardiovascular-renal system	397.2	395.3	357.1	355.5	352.0
Vascular lesions, central nervous system	71.9	72.5	66.5	67.7	66.5
Diseases of heart	296.7	295.2	263.9	261.5	260.4
Chronic rheumatic heart disease	11.1	11.4	10.6	10.8	11.4
Arteriosclerotic and degenerative heart disease	241.0	238.3	211.9	207.9	206.5
Diseases of coronary arteries	144.1	140.2	124.2	123.8	118.7
Hypertension with heart disease	31.8	32.0	29.3	30.6	31.5
Other diseases of heart	12.8	13.5	12.1	12.2	10.9
Nephritis and nephrosis	6.3	7.5	6.7	7.1	7.4
Pneumonia and influenza	22.1	23.2	21.5	18.5	20.3
Complications of pregnancy, childbirth	0.7	0.7	0.6	0.8	0.8
Suicide	7.4	5.9	6.1	6.5	6.1
Homicide	2.8	3.4	2.8	2.8	2.9
Accidents—total	35.0	35.0	32.4	33.1	34.2
Motor vehicle	15.7	16.9	14.0	14.6	14.8
All other causes	94.3	95.2	87.5	85.5	84.1

*These death rates relate to persons insured under Weekly or Monthly premium-paying Industrial policies and Monthly premium-paying Ordinary policies for small amounts of insurance.

†Beginning with January 1959, deaths have been classified according to the Seventh Revision of the International List of Causes of Death. Consequently, the death rates for individual causes in 1959 and subsequent years are not strictly comparable with those for earlier periods. Rates for 1960 and 1961 are provisional.

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